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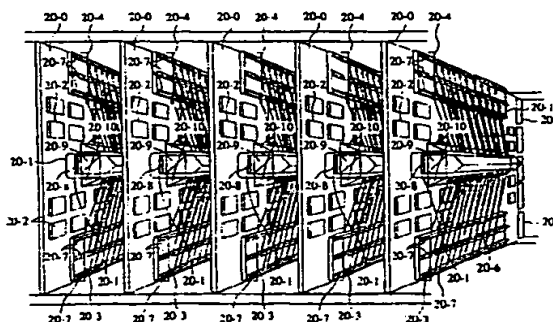
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### (54) Board-to-board and unit-to-unit optical interconnection system

(57) The optical beam emitted from the transmitter array(20-3) is input into the polarization beam splitter (20-9), and then turned by a right angle to input the opening portion(20-1) of the neighboring board. Then, polarization of the optical beam is controlled by the polarization control array device(20-8) provided on the opening portion(20-1) to thereby rotate a plane of polarization by 90°, then the optical beam is turned by the polarization beam splitter(20-9) by a right angle to input into the first light deflection control array device(20-10) which then controls the propagation direction of the optical beam to input into the desired photodetector. On the other hand, the optical beam whose plane of polarization is not rotated by the polarization control array device(20-8) by 90° passes through the polarization beam splitter(20-9) along the propagation direction to input into the opening portion(20-1) of the neighboring board, and is then controlled similarly. The optical beam array emitted from the transmitter array with the lens array which is attached to the lower end portion of the board (2-1) is received by the light deflection control array device(7-4), then the propagation direction of the optical beam array is variably controlled every optical beam to be input into the mirror(7-5) with a gradient, and then the optical beam array(7-6) reflected by the mirror(7-5) is received by the photodetector with the lens array.

Therefore, the optical beams from the desired boards can be connected to the photodetector mounted on another desired board. Similarly, the board-to-board free-space optical interconnection system between the boards in a certain unit and a different unit arbitrarily can be provided by introducing the light deflection control array device.

FIG.20





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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 24 October 2001	Examiner Beaven, G
CATEGORY OF CITED DOCUMENTS		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document	

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The present search report has been drawn up for all claims		
Place of search <b>MUNICH</b>	Date of completion of the search <b>24 October 2001</b>	Examiner <b>Beaven, G</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>		

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Place of search: <b>MUNICH</b>		Date of completion of the search: <b>24 October 2001</b>	Examiner: <b>Beaven, G</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons S : member of the same patent family, corresponding document</p>			

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